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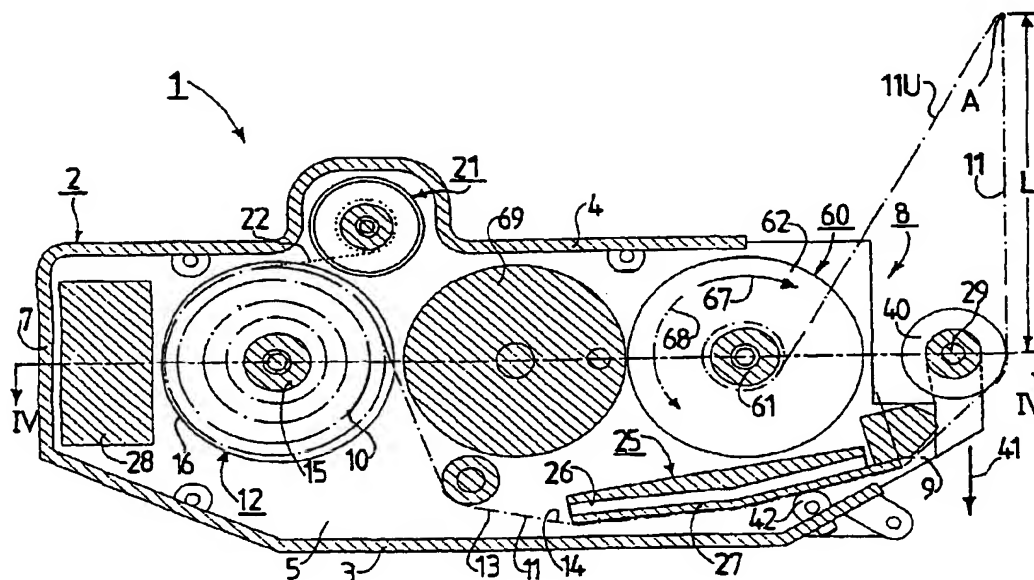
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(54) Title: **DEPILATING APPARATUS WITH A DEPILATING TAPE**



(57) Abstract: In a depilating apparatus (1), a housing (2) of the depilating apparatus (1) contains a supply (10) of a depilating tape (11), and a heating device (25) for heating the depilating tape (11) and an application roller (40) for applying the heated depilating tape (11) to the skin of a person are provided, wherein, in addition, a wind-up reel (60) for winding up depilating tape (11) that has already been used, and a motor (69) for driving the wind-up reel (60) are provided.

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Depilating apparatus with a depilating tape

The invention relates to a depilating apparatus with a housing, which housing is provided and designed to accommodate a supply of a depilating tape, which depilating tape can be pulled away from the supply and can then be applied to the skin of a person, and which depilating tape, after application to the skin of a person, adheres to the skin along an application length and can then be pulled away from the skin of a person, and with application means for applying the depilating tape to the skin of a person, and with an opening in the housing, which opening is provided and designed for passing the depilating tape through to the skin of a person, and with a wind-up reel, which wind-up reel is provided and designed to take up the depilating tape that was previously adhering to the skin of a person.

A depilating apparatus of the generic type cited in the first paragraph above is known from patent document EP 0 738 482 B1. The known apparatus is equipped with a rectangular and largely cuboidal housing, which, on a side running transversely in relation to the longitudinal direction of the housing, has an opening for passing through the heated depilating tape to the skin of a person, and which is equipped with a chassis that can be adjusted in the housing in parallel with the longitudinal direction of the housing, on which chassis a supply reel for the depilating tape and a wind-up reel for the depilating tape are rotatably mounted and on which chassis, in addition, a block-shaped heating device is arranged, with the aid of which the depilating tape can be heated and which simultaneously forms the application means for applying the heated depilating tape to the skin of a person. With the aid of the chassis, the heating device used as the application means can be brought into the area of the opening in the housing, as a result of which, with the aid of the heating device, which is equipped with a press-on surface for pressing the heated depilating tape onto the skin of a person, a section of the depilating tape essentially corresponding to the size of the press-on surface can be pressed onto the skin of a person and, in this manner, can be brought into an adhesive connection with the skin of a person. The depilating tape that has been brought into an active connection with the skin of a person, having previously been

heated with the aid of the heating device, wherein the depilating wax provided on the depilating tape has been heated so that the depilating wax has softened and therefore was able to enclose hair, cools during the adhesion to the skin of a person, wherein a cooling of the depilating wax occurs, with the result that a retention of the enclosed hair on the depilating tape takes place with the aid of the depilating wax. Once cooling is sufficient, the depilating tape, including the hair retained on the depilating tape with the aid of the depilating wax, is pulled away from the skin of the person as quickly as possible, i.e. with a jerking movement, as a result of which the removal of the retained hair from the skin of the person occurs. The jerking removal of the depilating tape from the skin of a person takes place by means of an abrupt backward movement of the chassis carrying the heating device away from the opening of the housing, after which the depilating tape that has been pulled away from the skin of a person runs within the housing like a loose loop.

In the known apparatus, the loose loop mentioned above has to be eliminated by manually rotating the wind-up reel which is rotatably mounted on the chassis, as a result of which the used depilating tape is wound up. Winding manually in this way represents a procedure that is a nuisance to the user and requires additional time, which is generally felt to be not very user-friendly.

It is an object of the invention to avoid the above-mentioned disadvantageous situation, and to realize an improved depilating apparatus.

To achieve the above-mentioned object, features in accordance with the invention are provided in a depilating apparatus in accordance with the invention, so that a depilating apparatus in accordance with the invention may be characterized in the manner stated below, namely:

A depilating apparatus with a housing, which housing is provided and designed to accommodate a supply of a depilating tape, which depilating tape can be pulled away from the supply and can then be applied to the skin of a person, and which depilating tape, after application to the skin of a person, adheres to the skin along an application length and can then be pulled away from the skin of a person, and with application means for applying the depilating tape to the skin of a person, and with an opening in the housing, which opening is provided and designed for passing the depilating tape through to the skin of a person, and with a wind-up reel, which wind-up reel is provided and designed to take up the depilating tape that was previously adhering to the skin of a person, wherein a motor

accommodated in the housing is provided, and wherein a drive connection is provided between the motor and the wind-up reel, so that the wind-up reel can be driven in rotation with the aid of the motor to wind up the depilating tape that was previously adhering to the skin of a person.

5 Through the provision of the features in accordance with the invention, it is achieved with only a small additional outlay that the used depilating tape that has been pulled away from the skin of a person following an undertaken depilating procedure is wound onto the wind-up reel automatically with the aid of the motor, which is extremely advantageous in respect of the highest possible degree of user-friendliness. The provision of the motor also
10 has the great advantage that the pulling-off of the depilating tape applied to the skin of a person can be undertaken with this motor, as a result of which it is made possible to match the pull-off force and the pull-off speed to the desired requirements in a relatively simple manner since both the pull-off force and the pull-off speed depend on the motor torque and selection is therefore relatively simple by an appropriate choice of motor or by appropriate
15 influencing of the motor. With the aid of a motor of this kind, it is also ensured with a high degree of certainty that a constant pull-off force and a constant pull-off speed will be retained over the entire service life.

 In a depilating apparatus in accordance with the invention, it has proved extremely advantageous if, in addition, the features as claimed in claim 2 are provided. It is
20 hereby achieved that the flux of force between the motor and the wind-up reel can be increased if desired, which is exploited in an advantageous manner when the depilating tape is applied to the skin of a person since, in this case, the drive connection is interrupted and, as a result, a used depilating tape already wound onto the wind-up reel can be pulled off again, which is advantageous in respect of the smallest possible consumption of depilating tape.

25 In a depilating apparatus as described in the paragraph above, it has proved especially advantageous if, in addition, the features as claimed in claim 3 are provided. This is advantageous in respect of the simplest and most operationally reliable design possible. The interruption of the drive connection can, however, also take place automatically, for instance by pressing the application means onto the skin of a person, wherein a control device
30 for control purposes, namely to interrupt the drive connection, is provided between the application means or the support means for the application means and the interruptible drive connection.

 In a depilating apparatus in accordance with the invention, it has further proved advantageous if, in addition, the features as claimed in claim 4 are provided. The

realization of lengths of the application length that are matched to the particular areas of skin to be depilated is hereby enabled if desired.

In a depilating apparatus as described in the paragraph above, it has proved extremely advantageous if, in addition, the features as claimed in claim 5 are provided. In this manner, an especially simple, operationally reliable design can be realized, which is further characterized by a high level of user-friendliness.

In a depilating apparatus as described in the paragraph above, it has proved extremely advantageous if, in addition, the features as claimed in claim 6 are provided. This design is of advantage in respect of a simple introduction of the depilating tape into the depilating apparatus. This design is further advantageous in respect of a satisfactory operating mode of the blocking means. Instead of a supply reel, however, a supply of depilating tape may also be provided in the form of a stack formed by zigzag folding of the depilating tape in a depilating apparatus in accordance with the invention.

In a depilating apparatus in accordance with the invention, it has further proved advantageous if, in addition, the features as claimed in claim 7 are provided. In this manner, an especially simple, readily performed application of the depilating tape to the skin of a person is ensured.

The above-mentioned aspects and further aspects of the invention are explained below.

The invention will be further described with reference to examples of embodiments shown in the drawings, to which, however, the invention is not restricted.

Fig. 1 shows, in schematic form, in a section along line I – I in Fig. 2, a depilating apparatus in accordance with one embodiment example of the invention.

Fig. 2 shows, in schematic form, in a section along line II – II in Fig. 1, the depilating apparatus in accordance with Fig. 1.

Figs. 1 and 2 show a depilating apparatus 1, which is a so-called wax depilating apparatus, and with which hair can be removed from the skin of a person using wax.

The depilating apparatus 1 is equipped with a housing 2, which is held in one hand when operating the depilating apparatus 1. Housing 2 is equipped with a front wall 3,

angled in two places, a rear wall 4 with a protuberance, a first sidewall 5, a second sidewall 6 and a top wall 7. In a bottom area 8 of housing 2, the depilating apparatus 1 is provided with an opening 9, the purpose of which will be discussed in greater detail below. Housing 2 is designed to accommodate a supply 10 of a depilating tape 11.

5 In the depilating apparatus 1, the supply 10 of depilating tape 11 is wound to form a supply spool 10, wound onto a supply reel 12, so that the supply spool 10 forms the supply 10. When the entire supply 10 of a supply reel 12 has been used up, the empty supply reel 12 is removed from the housing 2 and a new supply reel 12 with a full supply spool 10 is inserted into the housing 2. The depilating tape 11 has a front side 13 and a rear side 14. On
10 the front side 13, the depilating tape 11 is equipped with a wax layer, which cannot be seen in Figs. 1 and 2. The depilating tape 11 can be pulled away from the supply spool 10 and can then be heated and then applied to the skin of a person. After being applied to the skin of a person, the depilating tape 11 adheres to the skin of a person along an application length L, which is shown schematically in Fig. 1. The depilating tape 11 can subsequently be pulled
15 away from the skin of a person, wherein, during this pulling away, hair is removed from the skin of a person by pulling or tearing the hair out.

The supply reel 12 is equipped with a hub 15, which is rotatably mounted with the aid of sidewalls 5 and 6, and a first reel flange 16 and a second reel flange 17, which two reel flanges 16 and 17 are connected to hub 15 with rotational resistance. The supply reel 12
20 is further equipped with a reel toothed-wheel 18, connected to the second reel flange coaxially and with rotational resistance, and an endless-belt wheel 19, connected to the reel toothed-wheel 18 coaxially and with rotational resistance, around which an endless belt 20 is arranged.

A protection-tape wind-up reel 21 can be driven in rotation, in a manner that is
25 not described in greater detail, with the aid of the endless belt 20. A protection tape 22, indicated with a dotted line in Fig. 1, can be wound onto the protection-tape wind-up reel 21. With depilating tape 11 wound onto supply spool 10, protection tape 22 is provided for the purpose of covering the wax layer adjoining the front side 13 of depilating tape 11, and, when depilating tape 11 is pulled away from the supply spool 10, can be separated from the wax
30 layer and wound onto the protection-tape wind-up reel 21.

In its housing 2, the depilating apparatus 1 contains a heating device 25, which is mounted so as to be stationary. The heating device 25 is equipped with heating means 26, which is shown schematically, and a heating panel 27, which can be heated up with the aid of heating means 26, along which heating panel 27 the depilating tape 11 is arranged, so that the

depilating tape 11, pulled away from the supply spool 10 and passing the heating device 25, can be heated with the aid of the heating panel 27 in order to heat the wax layer adjoining the depilating tape 11 on its front side 13. To supply the heating means 26 with electrical power, a supply circuit 28, which is indicated schematically and is conductively connected to the heating means 26, is provided in housing 2.

With the aid of the heating device 25, the depilating tape 11, pulled away from the supply 10, i.e. from the supply spool 10, can be heated in sections. By heating in this way, the wax layer adjoining the depilating tape 11 is softened, so the wax layer assumes a consistency such that the heated wax can enclose hair on the skin of a person.

The depilating apparatus 1 is further equipped with application means 40 for applying the heated depilating tape 11 to the skin of a person. The application means 40 in the present case takes the form of an application roller 40, which has a circumferential surface that is concave in cross-section. The depilating tape 11 is arranged around the application roller 40 in a direction leading from front wall 3 to rear wall 4 of housing 2, which is opposite to the direction of the forward motion of the depilating apparatus 1 when the depilating apparatus 1 is in operation. The direction of forward motion of the depilating apparatus 1 when the depilating apparatus 1 is in operation is indicated in Fig. 1 with an arrow 41. The application roller 40 is arranged in the area of the opening 9 of housing 2 and is rotatably mounted on an axle 29. The opening 9 is thereby provided and designed so that the heated depilating tape 11 can be passed through to the skin of a person.

Interacting with the heating panel 27, with the depilating tape 11 inserted in between, is a press-on roller 42, which press-on roller 42 ensures that the depilating tape 11 presses gently against the heating plate 27.

At the start of the depilating procedure, the application roller 40, with the short piece of the depilating tape 11 inserted in between, is placed on the skin of a person. Subsequently, the depilating apparatus 1, and consequently the application roller 40 also, is moved over the skin of the person in the direction of arrow 41, as a result of which the depilating tape 11 is pulled away from supply reel 12 and heated with the aid of the heating device 25, and as a result of which the heated depilating tape 11 is applied to the skin of a person so that, following such an application of the depilating tape 11 to the skin of a person, i.e. when the depilating apparatus 1 is no longer moved forward in the direction of arrow 41, the depilating tape 11 adheres to the skin of a person along a length of application length L as determined in this case.

Provided in the depilating apparatus 1 are determination means 45, which are provided and designed for determining the application length L along which the depilating tape 11 adheres to the skin of a person. The design of the determination means 45 is hereby advantageously undertaken in such a way that the determination means 45 are designed to
5 determine different application lengths L as desired.

In the depilating apparatus 1, the determination means 45 are equipped with a hand-operated control button 46 and with blocking means 47 which interacts with control button 46 on the one hand and with the supply 10, i.e. the supply spool 10, on the other. The control button 46 is designed as a sliding button 46, which can be shifted between a second
10 position shown in Fig. 1 and a first position not shown in Fig. 1, wherein the control button 46 can be moved counter to the direction of an arrow 48, from its second position shown in Fig. 1 into its first position. The control button 46 is provided in the area of the second sidewall 6 and is equipped with a button head 49 and a button slider 50. Provided on the button slider 50 is a control link, which is not shown and which is provided and designed to
15 interact with blocking means 47. In the present case, the blocking means 47 are essentially formed by an L-shaped, swivel-mounted blocking lever 47. The control link acts on a first end of the blocking lever 47. With its second end 54, the blocking lever 47 interacts with the toothing of reel toothed-wheel 18. The design hereby is such that, with the control button 46 in its second position as shown in Fig. 1, the blocking lever 47 assumes a blocking position
20 that blocks any pulling away of the depilating tape 11 from the supply spool 10, and that, with the control button 46 in its first position, not shown in Fig. 1, the blocking lever 47 assumes a release position enabling a pulling away of the depilating tape 11 from supply spool 10. With the aid of the control button 46, the supply circuit 28 for the heating means 26 of the heating device 25 can be switched on and off.

In addition to the supply reel 12 in the depilating apparatus 1, a wind-up reel 60 is provided. The wind-up reel 60 is provided and designed for winding up the depilating tape 11 that was previously adhering to the skin of a person. The wind-up reel 60 is equipped with a hub 61 and a first reel flange 62 and a second reel flange 63. Connected to second reel flange 63 coaxially and with rotational resistance is a reel toothed-wheel 64. Rotatably
30 mounted on a sleeve-shaped extension 65 of the reel toothed-wheel 64 is a drive toothed-wheel 66. Provided between the drive toothed-wheel 66 and the reel toothed-wheel 64 is a single-direction coupling not shown in Fig. 2. With the aid of the single-direction coupling, a transmission of force or torque can be undertaken if the drive toothed-wheel 66 is operated in accordance with the arrow 67 represented by a solid line in Fig. 1. If, conversely, the drive

toothed-wheel 66 is operated in accordance with the arrow 68 represented by a broken line in Fig. 1, no force or torque transmission takes place from the drive toothed-wheel 66 to the reel toothed-wheel 64 or, as a result, to the wind-up reel 60.

The depilating apparatus 1 is equipped with a motor 69 accommodated in the housing 2. The motor 69 is equipped with a motor shaft 70, on which a first toothed wheel 71 sits with rotational resistance. Engaging in the first toothed wheel 71 is a second toothed wheel 72 which is rotatably mounted with the aid of an axle 73 protruding from second sidewall 6. The second toothed wheel 72 engages with the drive toothed-wheel 66. A drive connection 74, comprising the motor shaft 70 and the first toothed wheel 71 and the second toothed wheel 72 and the drive toothed-wheel 66 and the (not shown) single-direction coupling and the reel toothed-wheel 64, is thereby provided between the motor 69 and the wind-up reel 60. In this manner, the wind-up reel 60 can be rotatably operated with the aid of of the motor 69 to wind up the depilating tape 11 which was previously adhering to the skin of a person. The drive connection 74 between the motor 69 and the wind-up reel 60 can hereby be interrupted using the single-direction coupling between the drive toothed-wheel 66 and the reel toothed-wheel 64. To interrupt the drive connection 74, means suitable for the purpose are provided, in this case constituting the hand-operated control button 46, through actuation of which the drive means 74 can be interrupted. With the aid of the control button 46, the motor 69 can be switched on if control button 46 is moved from its first position, which is not shown in Fig. 2, in the direction of arrow 48 into its second position as shown in Fig. 2, wherein the motor 69 is then operated to drive the wind-up reel 60. If, conversely, the control button 46 is moved from its second position as shown in Fig. 2 counter to the direction of arrow 48 into its first position, which is not shown in Fig. 2, and remains in its first position, the motor 69 is switched off and, using the braking effect of the motor 69, the first toothed wheel 71 and the second toothed wheel 72 and the drive toothed-wheel 66 are secured against rotation, wherein, however, by virtue of the effect of the single-direction coupling provided between the drive toothed-wheel 66 and the reel toothed-wheel 64, the reel toothed-wheel 64 can be operated in the direction of arrow 68 by pulling off the depilating tape 11 that was previously already wound onto the wind-up reel 60, which means, in other words, that a depilating tape 11 that has already been wound onto the wind-up reel 60 can again be unwound from the wind-up reel 60.

When the depilating apparatus 1 is not in use, the control button 46 of the determination means 45 is located in its second position as shown in Fig. 1. It is hereby ensured, via the control link of the button slider 50, that the blocking lever 47 assumes its

blocking position, blocking a pulling-off of the depilating tape 11 from supply spool 10. It is further ensured, with the aid of the control button 46, that the supply circuit 28 is switched off and therefore no supply of power to the heating means 26 takes place.

When a user of the depilating apparatus 1 wishes to put the depilating
5 apparatus 1 into operation, i.e. wishes to undertake a depilating procedure, the user takes the depilating apparatus 1 in his/her hand and pushes the control button 46 of the determination means 45 out of its position as shown in Fig. 2 counter to the direction of arrow 48 into its first position, which is not shown in Fig. 2. As a result, the supply circuit 28 is switched on with the aid of the control button 46, so that the heating means 26 is supplied with power and,
10 as a result, the heating panel 27 is heated. Through the moving of the control button 46 into its first position, the blocking lever 47 is also swiveled, via the (not shown) control link of the button slider 50, so that the blocking lever 47 subsequently assumes its release position, allowing the depilating tape 11 to be pulled off from the supply reel 12. The motor 69 remains switched off. If, in the area of point A as shown in Fig. 1, the user now places the
15 depilating apparatus 1 with the application roller 40 on his/her skin or on the skin of another person, with the short piece of the depilating tape 11 located in the area of the application roller 40 outside of the housing 2 inserted in between, and subsequently moves the depilating apparatus 1 forward along the skin in the direction of arrow 41, wherein the application roller 40 presses the depilating tape 11 against the skin, this results in the depilating tape 11, which
20 has been heated with the aid of the heating device 25, being applied to the skin with the aid of the application roller 40. This application takes place as long as determined with the aid of the determination means 45 of the depilating apparatus 1, which means, in other words, that this application takes place as long as the control button 46 of the determination means 45 remains in its first position. Simultaneously, the depilating tape 11 that had already been
25 applied to the skin, a section of which is designated 11U in Fig. 1, is again unwound from the wind-up reel 60 in accordance with arrow 68. As soon as the depilating tape 11 has been applied to the skin over application length L for the desired length, the forward movement of depilating apparatus 1 along arrow 41 is terminated. When the desired application length L has been reached and the depilating tape 11 has cooled down, the user of the depilating
30 apparatus 1 moves the control button 46 of the determination means 45 in the direction of arrow 48 from the first position of the control button 46, which is not shown in Fig. 1, into its second position as shown in Fig. 1. This has the result that the blocking lever 47 is swiveled, via the (not shown) control link of the button slider 50, into its blocking position, in which blocking position the blocking lever 47 blocks any pulling away of the depilating tape 11

from the supply spool 10. The electrical supply of the heating means 26 of the heating device 25 is also terminated. Therefore, no more depilating tape 11 can be heated, and neither can any more depilating tape 11 be applied to the skin.

During the application of the heated depilating tape 11 to the skin of a person, the softened wax encloses the hair present in the area of the skin. The depilating tape 11 applied to the skin subsequently cools. Following cooling of the depilating tape 11, the motor 69 is switched on by the movement of the control button 46 into its second position as shown in Fig. 1. This has the result that the wind-up reel 60 is operated suddenly and at a relatively high speed, which results in the depilating tape 11 previously applied to the skin being pulled away from the skin of a person with a jerking movement, thereby pulling hair out of the skin of a person. This is possible because supply spool 10 is secured against rotation with the aid of blocking lever 47.

With the depilating apparatus 1, the important advantages are obtained that different application lengths L can be realized as desired, and that the rapid pulling-off of depilating tape 11 from the skin of a person takes place by mechanical means. The further important advantage is obtained with the depilating apparatus 1 that the pulling-off of the depilating tape 11 applied to the skin of a person takes place, at least for the greater part, at an acute pull-off angle which exists between the depilating tape 11 applied to the skin and the section of depilating tape 11U running from the skin to the wind-up reel 60. A sharp pull-off angle of this kind is a positive parameter in respect of achieving good depilating results, i.e. good hair removal results.

The depilating apparatus 1 described above uses so-called hot-wax tapes, which have to be heated before being applied to the skin. The measures in accordance with the invention could, however, also be introduced in depilating appliances for so-called cold-wax tape, which cold-wax tape does not have to be heated, so this kind of depilating apparatus can operate without the need for a heating device.

The depilating apparatus 1 described above uses reels with flanges and with a reel hub with a circular cross-section. However, reels without flanges and with different hub cross-sections, e.g. with an elliptical or polygonal cross-section, may also be used.

With regard to the depilating apparatus 1, it should also be mentioned that, in a modification to this depilating apparatus 1, the application roller 40 may also be of a heatable design in order that depilating tape 11 can be subjected to an additional heating process immediately before the application to the skin of a person.

CLAIMS:

1. A depilating apparatus (1)
with a housing (2), which housing (2) is designed to accommodate a supply
(10) of a depilating tape (11), which depilating tape (11) can be pulled away from the supply
(10) and can then be applied to the skin of a person, and which depilating tape (11), after
5 application to the skin of a person, adheres to the skin along an application length (L) and can
then be pulled away from the skin of a person,
and with application means (40) for applying the depilating tape (11) to the
skin of a person, and
with an opening (9) in the housing (2), which opening (9) is provided and
10 designed for passing the depilating tape (11) through to the skin of a person, and
with a wind-up reel (60), which wind-up reel (60) is provided and designed to
take up the depilating tape (11) that was previously adhering to the skin of a person,
wherein a motor (69) accommodated in the housing (2) is provided, and
wherein a drive connection (74) is provided between the motor (69) and the
15 wind-up reel (60), so that the wind-up reel (60) can be driven in rotation with the aid of the
motor (69) to wind up the depilating tape (11) that was previously adhering to the skin of a
person.
2. A depilating apparatus (1) as claimed in claim 1,
20 wherein an interruptible drive connection (74) is provided as the drive
connection (74) between the motor (69) and the wind-up reel (60), and
wherein means for interrupting the drive connection (74) are provided.
3. A depilating apparatus (1) as claimed in claim 2,
25 wherein the means for interrupting the drive connection (74) takes the form of
a hand-operated control button (46), through actuation of which the drive means (74) can be
interrupted.
4. A depilating apparatus (1) as claimed in claim 1,

wherein determination means (45) is provided for determining the application length (L) along which depilating tape (11) adheres to the skin of a person, and

wherein the determination means (45) is designed to determine different application lengths (L) as desired.

5

5. A depilating apparatus (1) as claimed in claim 4,

wherein the determination means (45) is equipped with a hand-operated control button (46) and with blocking means (47) which interacts with control button (46) on the one hand and with the supply (10) on the other, which control button (46) can be shifted
10 between a first position and a second position, and

wherein, with the control button (46) in its first position, the blocking lever (47) assumes a release position enabling a pulling away of depilating tape (11) from the supply (10), and

15 wherein, with the control button (46) in its second position, the blocking lever (47) assumes a blocking position that blocks any pulling away of depilating tape (11) from the supply (10).

6. A depilating apparatus (1) as claimed in claim 5,

20 wherein the supply (10) of depilating tape (11) is wound so as to form a supply coil (10) wound onto a supply reel (12), and

wherein the blocking means (47) interacts with the supply reel (12).

7. A depilating apparatus (1) as claimed in claim 1,

25 wherein the application means (40) takes the form of an application roller (40) which is arranged in the area of the opening (9) of the housing (2).

1/1

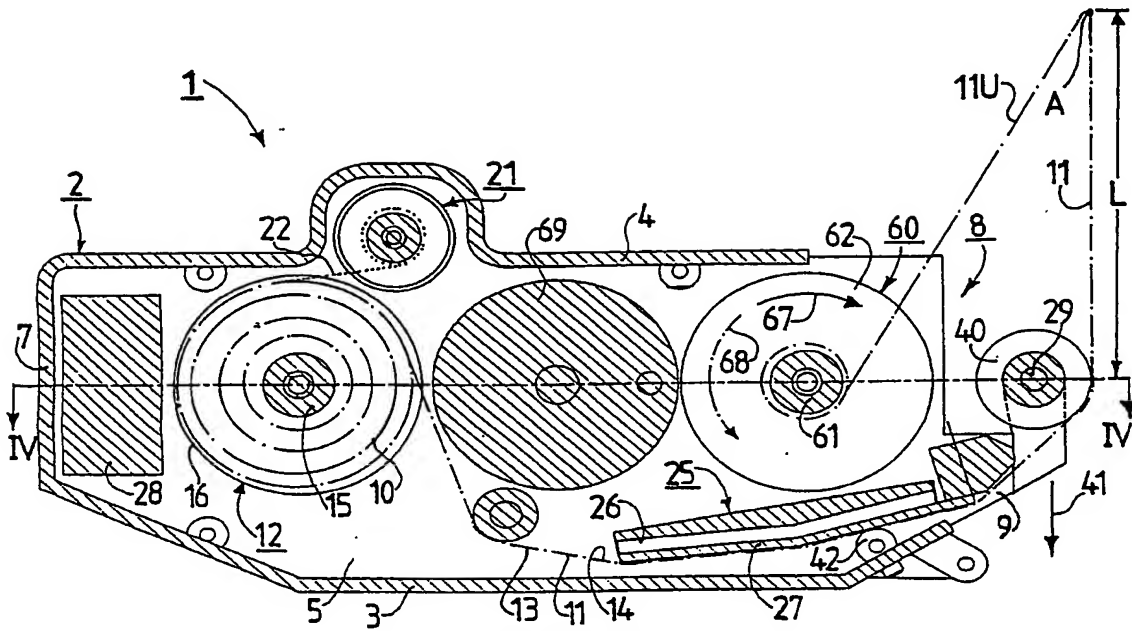


FIG. 1

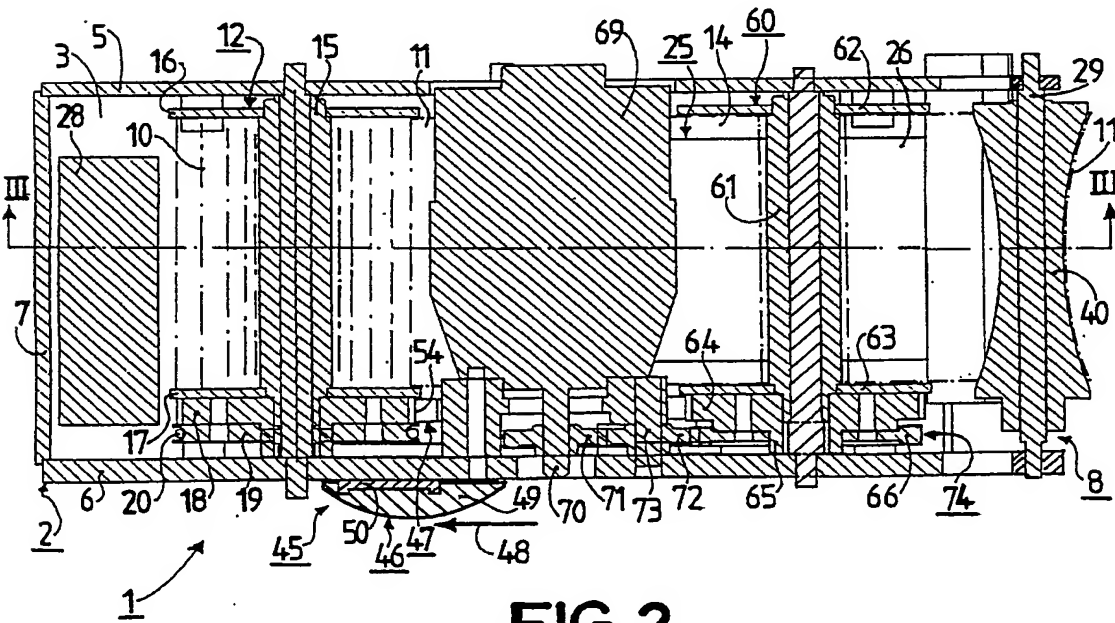


FIG. 2

INTERNATIONAL SEARCH REPORT

PCT/IB 03/03451

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A45D26/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A45D A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	LU 85 026 A (BLITOG AG) 19 June 1985 (1985-06-19) page 4, line 1-23	1
Y	EP 0 738 481 A (SEB SA) 23 October 1996 (1996-10-23) column 3, line 12 -column 6, line 46	1
A	EP 0 738 482 A (SEB SA) 23 October 1996 (1996-10-23) cited in the application column 4, line 4 -column 9, line 15	1

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

9 December 2003

Date of mailing of the international search report

17/12/2003

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INTERNATIONAL SEARCH REPORT

PCT/IB/03/03451

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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